

CASE HISTORY 14

World's First Wireless Foot Control



“Foot Controls Unplugged”

Market

Various medical and dental OEM markets

Client Type

Established OEM ([Linemaster Switch Corp](#))

Unmet Need

Make foot controllers easier to use, move, clean, and store by eliminating the wire that connected foot controllers to the devices that they control in operating rooms, emergency rooms, endoscopy suites, and dental offices.

Approach

The client's product line was stable, but stale. Every product had a wire attached to it. OTI cold-called the client to propose the development of a family of wireless devices for the medical OEM market. The proposal was accepted, and a structured program of market research, product roadmapping, product development, field qualification, and manufacturing transfer was implemented.

Product Features

By eliminating wires, these products eliminate the hassles associated with wired foot control devices. There are no cords to tangle or become damaged. The controllers can be easily moved during surgery. They are sealed, and thus easily cleaned in a bucket of disinfectant. The lack of cords facilitates storage on equipment carts or on shelves. 360° operation allows placement of the foot control and its receiver anywhere in the room. Up to four pairs of controllers/receivers can co-operate in the same space. Custom firmware ensures data redundancy, insensitivity to data collision, and failsafe operation. The devices will operate for 200 hours at 50% duty cycle on 4 AA batteries.

Services Provided by OTI

- Field surveys to identify any optical interference issues
- User research, including focus groups
- Optical design & engineering
- Opto-mechanical engineering, including part design & vendor sourcing
- Electronic hardware and firmware development
- Industrial design

Client Comment

“Most of our products were designed by our founder, and he'd been dead for 25 years when OTI approached us with a novel concept for wireless footswitches. They really got us excited, and they drove the project forward from the initial meeting to release of our first product. These wireless products now account for nearly half of our business. We credit much of this success to what we learned in our collaboration with OTI.”

- Joe Carlone, CEO

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